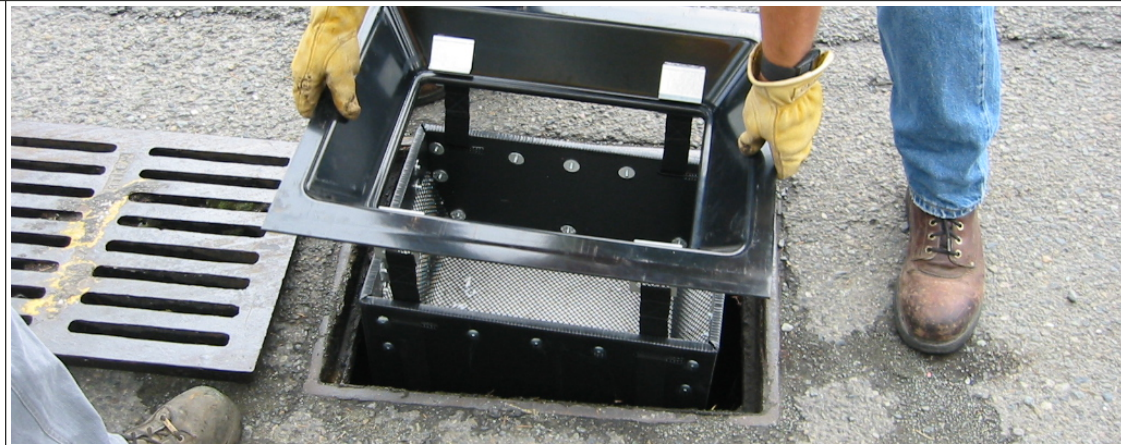


The Ultra-Urban[®] Filter with Smart Sponge[®] Filtration Media

REDUCTION OF HEAVY METALS, BACTERIA AND HYDROCARBONS IN STORMWATER RUNOFF

SMART SPONGE TECHNOLOGY IS BASED ON A PROPRIETARY BLEND OF SYNTHETIC POLYMERS AIMED AT THE REMOVAL OF HYDROCARBONS AND OIL DERIVATIVES FROM WATER.



The Ultra-Urban Filter with Smart Sponge, developed and manufactured by AbTech Industries, is an innovative low-cost BMP that helps meet NPDES requirements with effective filtration, efficient application, simple installation, and low maintenance.

APPLICATION

Smart Sponge fully encapsulates recovered oil, resulting in a substantially more effective response that prevents absorbed oil from leaching. It is also capable of successfully removing sheen. In addition, the Smart Sponge remains buoyant in calm or agitated water, permitting it to remain in place until fully saturated, resulting in no wasted product.

Once oil is absorbed, the Smart Sponge transforms the pollutants into a stable solid for easy recycling, providing a closed-loop solution. Smart Sponge technology is a cost-effective BMP with low installation and maintenance labor costs. In comparison to other products, the Smart Sponge technology allows for less expensive and less problematic handling and disposal of the waste product designed not to deteriorate in water, allowing for a longer product life.

HYDROCARBON REMOVAL

The Smart Sponge technology is deployed in products that offer customized solutions for stormwater pollution prevention, oil spill response, process water filtration and other industrial applications to meet specific environmental needs. AbTech Industries offers an extensive product line that is upgradeable to meet evolving community needs and regulatory requirements.

ANTIMICROBIAL REDUCTION

AbTech Industries has successfully deployed its patented antimicrobial technology, Smart Sponge Plus, which features an antimicrobial agent chemically and permanently bound to the Smart Sponge polymer surface. The antimicrobial mechanism is based on the patented agent's interaction with the microorganism cell membrane, causing the microorganism disruption – but no chemical or physical change in the agent. Antimicrobial activity does not reduce the agent's capability or cause its depletion and, therefore, maintains long-term effectiveness. Additionally, the hydrocarbon absorption capability is not inhibited. When properly installed and maintained, Smart Sponge Plus provides a significant reduction in coliform bacteria.

HEAVY METALS REMOVAL

AbTech Smart Sponge Heavy Metals (HM) media uses renewable resource based metal nanocomposites extruded into a macro-porous sponge. The media is in the form of hematite/magnetite and will bind to phosphorus resulting in removal rates as high as 98%. Smart Sponge HM media can be regenerated to its full adsorptive capacity and is ready for reuse immediately. When applied as tertiary treatment, Smart Sponge HM presents low capital cost, small footprint and significantly lower operating costs than conventional treatment systems.

Phosphorus is one of the major nutrients contributing in the increased eutrophication of lakes and natural waters. Its presence causes many water quality problems including increased purification costs, decreased recreational and conservation value of impoundments, loss of livestock and the possible lethal effect of algal toxins on drinking water.

SMART SPONGE[®]

Is chemically selective to hydrocarbons and capable of removing up to 1.5 times its own weight in hydrocarbons contamination. The Smart Sponge is capable of transforming hydrocarbons into a stable solid per the EPA's Toxicity Characteristic Leaching Procedure (TCLP).

SMART SPONGE[®] PLUS

Is registered with the EPA (Registration # 86256-1) for the reduction of total coliform bacteria. Smart Sponge Plus features an antimicrobial agent that is chemically and permanently bound to its polymer surface.

SMART SPONGE[®] HM

Reduces Cadmium, Copper, Chromium, Lead, Zinc, Iron, Arsenic, Selenium and Orthophosphate. Smart Sponge HM also inhibits growth of mildew and mold in a variety of applications.

Experts in Water

THE EXPERTISE TO CONSULT BUSINESSES ON COMPREHENSIVE WATER SOLUTIONS

SPECIFICATIONS

Part Number	Description	Dimensions	Gross Weight Approx. with Smart Sponge	Gross Weight Approx. Trash and Debris Only
Curb Opening Modules				
CO1414N	UUF, Normal Size	13.25"x14.25"x22.5"	20 Lbs.	5.5 lbs.
CO1414H	UUF, Half Size	13.25"x14.25"x13"	13 lbs.	4.5 lbs.
Drain Insert Modules				
DI1414N	UUF, Normal Size	13.25"x14.25"x21.125"	20 lbs.	5.6 lbs.
DI1414H	UUF, Half Size	13.25"x14.25"x13"	13 lbs.	4.5 lbs.
DI1420N	UUF, Normal Size	14"x19.25"x21.125"	24 lbs.	6.5 lbs.
DI1420H	UUF, Half Size	14"x19.25"x13.375"	18 lbs.	5.0 lbs.
DI1616N	UUF, Normal Size	16"x16"x21.125"	24 lbs.	6.5 lbs.
DI1616H	UUF, Half Size	16"x16"x13.375"	18 lbs.	5.0 lbs.
DI2020N	UUF, Normal Size	19.25"x19.25"x21.125"	30 lbs.	7.5 lbs.
DI2020H	UUF, Half Size	19.25"x19.25"x13.375"	18 lbs.	6.0 lbs.

BEST MANAGEMENT PRACTICE (BMP)

The Ultra-Urban filter with Smart Sponge meets or exceeds Stormwater Best Management Practices (BMP). AbTech offers non-point source pollution prevention and potential for long-standing remediation. The Ultra-Urban filter does not require modification of existing structures and is effective in fresh or salt water temperatures ranging from 32°F to 130°F.

INSTALLATION

Installation time varies depending upon mounting devices selected. The Drain Inlet (DI) series Ultra-Urban Filter will suspend vertically from the drain into the catch basin through a structural mount and funnel mechanism. A single mounting bracket made of 16-gauge galvanized steel is required for the installation of the Curb Opening (CO) series. The Ultra-Urban Filter should not be installed where modules obstruct the drain pipe outlet. The size of the drain should allow room for stormwater overflow.

The Ultra-Urban Filter should be serviced as needed to remove sediment and debris, according to expected debris accumulation at a minimum once per year. The sediment and debris can be quickly vacuumed out of the modules through the opening of the drain with conventional maintenance equipment. For example, a curb inlet with four to five Ultra-Urban Filter modules can typically be serviced in 10 minutes or less.

ABOUT ABTECH

AbTech offers innovative solutions for Stormwater Management and Industrial Water Treatment. AbTech integrates its own advanced technologies along with third-party technologies and systems to provide customers with effective and economical solutions. AbTech products include advanced filtration media technologies and various water treatment systems.

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ABTECH'S PROCESS CREATES A VERY POROUS STRUCTURE WITH HYDROPHOBIC AND OLEOPHILIC CHARACTERISTICS CAPABLE OF SELECTIVELY REMOVING HYDROCARBONS WHILE ALLOWING FOR HIGH FLOW THROUGH RATES.

MAINTENANCE

The Ultra-Urban filter should be serviced as needed to remove sediment and debris, according to expected debris accumulation. The sediment and debris can be quickly vacuumed out of the modules through the openings of the drain with conventional maintenance equipment. For example, a curb inlet with four to five Ultra-Urban filter modules can be typically serviced in 10 minutes or less.

Under normal operating conditions the Ultra-Urban filters should be replaced every 1-3 years.

DISPOSAL

The Smart Sponge samples saturated with hydrocarbons both in the lab and in the field have been tested according to the EPA's Toxicity Characteristic Leaching Procedure ("TCLP"). These tests show that Smart Sponge is a "non-leaching" (i.e., non-detect or "N.D.") product. As a result, Smart Sponge technology can afford many cost effective and environmentally friendly disposal options.

Waste-to-Energy Facilities - A specialized segment of the solid waste industry has used spent Smart Sponge as an alternative fuel in the production of electricity.

Cement Kilns - This industry has used the spent Smart Sponge as an alternative fuel in the production process of Portland Cement. This process is considered a beneficial reuse of waste products. The BTU value of spent Smart Sponge is consistently above the average acceptable levels set for this high temperature.

Landfills - As discussed above, spent Smart Sponge products have been classified as a solid waste and have been accepted at Subtitle D Landfills.

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